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25	Arg Tyr Phe Thr Arg Pro Val Thr Gly Ala Thr Ser Gly Ala Leu Gly	115	120 125
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	gggcctggga cgccaccaac ccgcatcgcg gcaccacacc actggccgaa ggcgagatct	600	
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20

Gly Asp Thr Val Tyr Ile Cys Ser Pro His Asn Ile Val Ser Ala Leu
 35 40 45

25

Asp Pro Asp Thr Gly Thr Glu Lys Trp Lys Phe Asp Pro His Ala Gln
 50 55 60

30

Thr Lys Val Trp Gln Arg Cys Arg Gly Val Gly Tyr Trp His Asp Ser
 65 70 75 80

35

Thr Ala Thr Asp Ala Asn Ala Pro Cys Ala Ser Arg Ile Val Leu Thr
 85 90 95

40

Thr Ile Asp Ala Arg Leu Ile Thr Ile Asp Ala Arg Thr Gly Gln Ala
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Cys Thr Asp Phe Gly Thr Asn Gly Asn Val Asn Leu Leu Thr Gly Leu
 115 120 125

45

Gly Pro Thr Ala Pro Gly Ser Tyr Tyr Pro Thr Ala Ala Pro Leu Val
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50

Ala Gly Asp Ile Val Val Val Gly Gly Arg Ile Ala Asp Asn Glu Arg
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Thr Gly Glu Pro Ser Gly Val Val Arg Gly Tyr Asp Val Arg Thr Gly
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55

Ala Gln Val Trp Ala Trp Asp Ala Thr Asn Pro His Arg Gly Thr Thr
 180 185 190

Pro Leu Ala Glu Gly Glu Ile Tyr Pro Ala Glu Thr Pro Asn Met Trp
195 200 205

5 Gly Thr Ala Ser Tyr Asp Pro Lys Leu Asn Leu Val Phe Phe Pro Leu
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10 Gly Asn Gln Thr Pro Asp Phe Trp Gly Gly Asp Arg Ser Lys Ala Ser
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15 Asp Glu Tyr Asn Asp Ala Phe Val Ala Val Asp Ala
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35 <220>
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25 <212> PRT

<213> Gluconobacter oxydans IFO 3244

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40 Leu Gly Gly Ser Trp Phe Tyr Thr Leu Ala Gly Ile Ala Leu Ala Ala
 35 40 45

45 Ser Ser Val Tyr Met Ile Arg Arg Asn Ile Leu Ser Thr Trp Ile Ala
 50 55 60

50 Leu Gly Leu Leu Val Ala Thr Ala Leu Trp Ser Leu Ala Glu Val Gly
 65 70 75 80

55 Thr Ser Phe Trp Pro Ser Phe Ser Arg Leu Ile Val Phe Leu Cys Val
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60 Ala Leu Ile Ala Thr Leu Met Ala Pro Trp Leu Ser Gly Pro Gly Arg
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65 Arg Tyr Phe Thr Arg Pro Val Thr Gly Ala Thr Ser Gly Ala Leu Gly
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5	Ala 130	Ile	Ile	Val	Ala	Phe 135	Leu	Ala	Gly	Met	Phe	Arg 140	Val	His	Pro	Thr
10	Ile 145	Ala	Pro	Gln	Asp	Thr 150	Thr	His	Pro	Gln	Glu 155	Thr	Ala	Ser	Thr	Ala 160
15	Asp	Ser	Asp	Gln	Pro 165	Gly	His	Asp	Trp	Pro 170	Ala	Tyr	Gly	Arg	Thr	Ala
20	Ser	Gly	Thr	Arg 180	Tyr	Ala	Ser	Phe	Thr 185	Gln	Ile	Asn	Arg	Asp 190	Asn	Val
25	Ser	Lys	Leu 195	Arg	Val	Ala	Trp	Thr 200	Tyr	Arg	Thr	Gly	Asp 205	Met	Ala	Leu
30	Asn 210	Gly	Ala	Glu	Phe	Gln	Gly 215	Thr	Pro	Ile	Lys	Ile 220	Gly	Asp	Thr	Val
35	Tyr 225	Ile	Cys	Ser	Pro	His 230	Asn	Ile	Val	Ser	Ala 235	Leu	Asp	Pro	Asp	Thr 240
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70	Val	Val	Val	Gly 340	Gly	Arg	Ile	Ala	Asp 345	Asn	Glu	Arg	Thr	Gly 350	Glu	Pro
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10	Gly Glu Ile Tyr Pro Ala Glu Thr Pro Asn Met Trp Gly Thr Ala Ser 385 390 395 400		
15	Tyr Asp Pro Lys Leu Asn Leu Val Phe Phe Pro Leu Gly Asn Gln Thr 405 410 415		
20	Pro Asp Phe Trp Gly Gly Asp Arg Ser Lys Ala Ser Asp Glu Tyr Asn 420 425 430		
25	Asp Ala Phe Val Ala Val Asp Ala Lys Thr Gly Asp Glu Arg Trp His 435 440 445		
30	Phe Arg Thr Ala Asn His Asp Leu Val Asp Tyr Asp Ala Thr Ala Gln 450 455 460		
35	Pro Ile Leu Tyr Asp Ile Pro Asp Gly His Gly Gly Thr Arg Pro Ala 465 470 475 480		
40	Ile Ile Ala Met Thr Lys Arg Gly Gln Ile Phe Val Leu Asp Arg Arg 485 490 495		
45	Asp Gly Thr Pro Ile Val Pro Val Glu Met Arg Lys Val Pro Gln Asp 500 505 510		
50	Gly Ala Pro Glu His Gln Tyr Leu Ala Pro Glu Gln Pro Tyr Ser Ala 515 520 525		
55	Leu Ser Ile Gly Thr Glu Arg Leu Lys Pro Ser Asp Met Trp Gly Gly 530 535 540		
	Thr Ile Phe Asp Gln Leu Leu Cys Arg Ile Gln Phe Ala Ser Tyr Arg 545 550 555 560		
	Tyr Glu Gly Glu Phe Thr Pro Val Asn Glu Lys Gln Ala Thr Ile Ile 565 570 575		
	Tyr Pro Gly Tyr Tyr Gly Gly Ile Asn Trp Gly Gly Gly Ala Val Asp 580 585 590		

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Glu Ser Thr Gly Thr Leu Leu Val Asn Asp Ile Arg Met Ala Gln Trp
 595 600 605

5 Gly Lys Phe Met Lys Gln Glu Glu Ala Arg Arg Ser Gly Phe Lys Pro
 610 615 620

10 Ser Ser Glu Gly Glu Tyr Ser Glu Gln Lys Gly Thr Pro Trp Gly Val
 625 630 635 640

15 Val Arg Ser Met Phe Phe Ser Pro Ala Gly Leu Pro Cys Val Lys Pro
 645 650 655

Pro Tyr Gly Thr Met Asn Ala Ile Asp Leu Arg Ser Gly Lys Val Lys
 660 665 670

20 Trp Ser Met Pro Leu Gly Thr Ile Gln Asp Met Pro Val His Gly Met
 675 680 685

25 Val Pro Gly Leu Ala Ile Pro Leu Gly Met Pro Thr Met Ser Gly Pro
 690 695 700

30 Leu Ala Thr His Thr Gly Leu Val Phe Phe Ser Gly Thr Leu Asp Asn
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35 Tyr Val Arg Ala Leu Asn Thr Asp Thr Gly Glu Val Val Trp Lys Ala
 725 730 735

Arg Leu Pro Val Ala Ser Gln Ala Ala Pro Met Ser Tyr Met Ser Asp
 740 745 750

40 Lys Thr Gly Lys Gln Tyr Ile Val Val Thr Ala Gly Gly Leu Thr Arg
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